

Evaluation of global left ventricular systolic function in dipper and newly diagnosed nondipper hypertensive patients

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Objective: Nondipper hypertension has been associated with enhanced target organ damage and adverse cardiovascular outcomes. The effect of dipper and non-dipper status on cardiac target organ damage has not been comprehensively investigated by two-dimensional strain echocardiography. We aimed to investigate myocardial deformational strain parameters in dipper and non-dipper untreated hypertensive patients.

Material and methods: We included 42 newly diagnosed hypertensive patients without previous history of cardiovascular disease and coexisting chronic disease. Study population consisted of two groups of patients, 23 dipper patients and 19 non dipper patients. Global longitudinal strain (GLS), radial strain and circumferential strain analysis were measured by two-dimensional (2-D) speckle tracking method.

Results: The study population included 42 patients (15 male) with a mean age of 54.5±9 years. The assessment of LV systolic function by GLS showed decreased values in nondippers compared with dippers (-18.13±2.07 vs. -13.7±1.95; p=0.001). But no significant intergroup differences were observed in circumferential and radial strain. The analysis showed that night-time mean arterial pressure (MAP), night-time systolic and diastolic blood pressures (BP), 24-hr SBP, dipping rate and nocturnal reduction rate of MAP were the parameters that correlated with GLS. Only dipping rate was independently associated with left ventricular GLS.

Conclusion: An isolated non-dipper BP was found to cause impaired LV systolic function detected by myocardial strain.

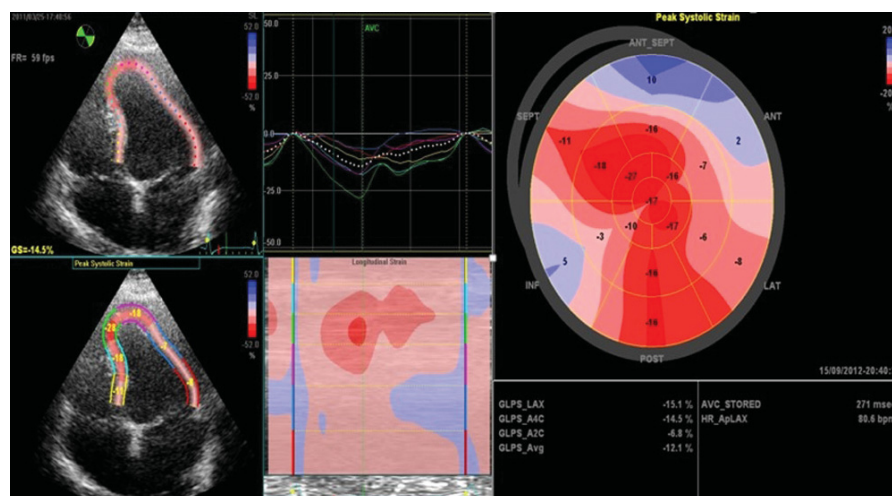


Figure 1